# SenAI API Documentation

## Overview

The SenAI API provides endpoints for resume screening, candidate management, and AI-powered shortlisting. The API uses JWT (JSON Web Token) based authentication and supports two user types: companies and candidates.

## Base URL

http://localhost:5000/api

## Authentication

SenAI uses JWT for authentication. After successful login, include the token in the Authorization header of your requests.

Authorization: Bearer <token>

## API Reference

### Authentication Endpoints

#### Register Company

Register a new company account.

* **URL**: /register/company
* **Method**: POST
* **Auth Required**: No

**Request Body:**

{  
 "email": "company@example.com",  
 "companyName": "Example Corp",  
 "password": "SecurePassword123"  
}

**Success Response:**

{  
 "message": "Company registered successfully"  
}

#### Register Candidate

Register a new candidate account.

* **URL**: /register/candidate
* **Method**: POST
* **Auth Required**: No

**Request Body:**

{  
 "email": "candidate@example.com",  
 "fullName": "John Doe",  
 "password": "SecurePassword123",  
 "phone": "1234567890" // Optional  
}

**Success Response:**

{  
 "message": "Candidate registered successfully"  
}

#### Login Company

Authenticate as a company.

* **URL**: /login/company
* **Method**: POST
* **Auth Required**: No

**Request Body:**

{  
 "email": "company@example.com",  
 "password": "SecurePassword123"  
}

**Success Response:**

{  
 "access\_token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9...",  
 "company": {  
 "id": 1,  
 "email": "company@example.com",  
 "companyName": "Example Corp"  
 }  
}

#### Login Candidate

Authenticate as a candidate.

* **URL**: /login/candidate
* **Method**: POST
* **Auth Required**: No

**Request Body:**

{  
 "email": "candidate@example.com",  
 "password": "SecurePassword123"  
}

**Success Response:**

{  
 "access\_token": "eyJhbGciOiJIUzI1NiIsInR5cCI6IkpXVCJ9...",  
 "candidate": {  
 "id": 1,  
 "email": "candidate@example.com",  
 "fullName": "John Doe",  
 "phone": "1234567890"  
 }  
}

#### Get Current User

Retrieve information about the currently authenticated user.

* **URL**: /me
* **Method**: GET
* **Auth Required**: Yes

**Success Response (Company):**

{  
 "id": 1,  
 "email": "company@example.com",  
 "companyName": "Example Corp",  
 "type": "company"  
}

**Success Response (Candidate):**

{  
 "id": 1,  
 "email": "candidate@example.com",  
 "fullName": "John Doe",  
 "phone": "1234567890",  
 "type": "candidate"  
}

### Company Endpoints

#### Get Company Profile

Retrieve the company profile and job details.

* **URL**: /company/profile
* **Method**: GET
* **Auth Required**: Yes (Company)

**Success Response:**

{  
 "id": 1,  
 "email": "company@example.com",  
 "companyName": "Example Corp",  
 "job\_role": "Software Engineer",  
 "job\_type": "Full-time",  
 "stipend": "$80,000-$100,000",  
 "location": "New York, NY",  
 "skills\_required": "Python, React, AWS",  
 "education\_qualification": "Bachelor's degree in Computer Science",  
 "description": "We are looking for a software engineer...",  
 "posted\_date": "2023-10-01",  
 "application\_deadline": "2023-11-01",  
 "profile\_completed": true  
}

#### Update Company Profile

Update company profile and job details.

* **URL**: /company/profile
* **Method**: PUT
* **Auth Required**: Yes (Company)

**Request Body:**

{  
 "companyName": "Example Corp",  
 "job\_role": "Software Engineer",  
 "job\_type": "Full-time",  
 "stipend": "$80,000-$100,000",  
 "location": "New York, NY",  
 "skills\_required": "Python, React, AWS",  
 "education\_qualification": "Bachelor's degree in Computer Science",  
 "description": "We are looking for a software engineer...",  
 "application\_deadline": "2023-11-01"  
}

**Success Response:**

{  
 "message": "Profile updated successfully",  
 "company": {  
 "id": 1,  
 "email": "company@example.com",  
 "companyName": "Example Corp",  
 "job\_role": "Software Engineer",  
 "job\_type": "Full-time",  
 "stipend": "$80,000-$100,000",  
 "location": "New York, NY",  
 "skills\_required": "Python, React, AWS",  
 "education\_qualification": "Bachelor's degree in Computer Science",  
 "description": "We are looking for a software engineer...",  
 "posted\_date": "2023-10-01",  
 "application\_deadline": "2023-11-01",  
 "profile\_completed": true  
 }  
}

#### Get Dashboard Statistics

Get company dashboard statistics.

* **URL**: /company/dashboard/stats
* **Method**: GET
* **Auth Required**: Yes (Company)

**Success Response:**

{  
 "totalResumes": 15,  
 "shortlisted": 5,  
 "pending": 10  
}

#### Get Applied Candidates

Retrieve candidates who applied to the company’s job.

* **URL**: /company/candidates
* **Method**: GET
* **Auth Required**: Yes (Company)

**Success Response:**

[  
 {  
 "id": 1,  
 "fullname": "John Doe",  
 "email": "john@example.com",  
 "phone": "1234567890",  
 "location": "Boston, MA",  
 "years\_experience": 3,  
 "resume\_path": "/Uploads/resumes/1\_20231001120000\_resume.pdf",  
 "status": "pending",  
 "shortlisted": false,  
 "applied\_date": "2023-10-01 12:00:00",  
 "education": [  
 {  
 "degree": "Bachelor of Science in Computer Science",  
 "institution": "MIT",  
 "graduation\_year": 2020,  
 "gpa": 3.8  
 }  
 ],  
 "skills": [  
 {  
 "skill\_name": "Python",  
 "category": "technical",  
 "proficiency": "advanced"  
 },  
 {  
 "skill\_name": "React",  
 "category": "technical",  
 "proficiency": "intermediate"  
 }  
 ]  
 }  
]

#### Update Candidate Shortlist Status

Update the shortlist status of a candidate.

* **URL**: /company/candidates/{candidate\_id}/shortlist
* **Method**: PUT
* **Auth Required**: Yes (Company)

**Request Body:**

{  
 "shortlisted": true  
}

**Success Response:**

{  
 "message": "Candidate shortlisted successfully",  
 "shortlisted": true  
}

#### Bulk Upload Resumes

Upload multiple resumes at once in a ZIP file.

* **URL**: /company/bulkUpload
* **Method**: POST
* **Auth Required**: Yes (Company)
* **Content-Type**: multipart/form-data

**Form Data:** - resumes: ZIP file containing resume documents (PDF, DOC, DOCX, TXT)

**Success Response:**

{  
 "message": "Bulk upload processed successfully",  
 "total\_files": 3,  
 "candidates\_created": [  
 {  
 "email": "john@example.com",  
 "name": "John Doe"  
 },  
 {  
 "email": "jane@example.com",  
 "name": "Jane Smith"  
 }  
 ],  
 "candidates\_applied": [  
 {  
 "email": "john@example.com",  
 "name": "John Doe"  
 },  
 {  
 "email": "jane@example.com",  
 "name": "Jane Smith"  
 },  
 {  
 "email": "existing@example.com",  
 "name": "Existing User"  
 }  
 ],  
 "errors": [  
 {  
 "filename": "invalid.txt",  
 "error": "No email found in resume"  
 }  
 ]  
}

#### AI Resume Shortlisting

Rank candidates based on AI shortlisting algorithms.

* **URL**: /company/resumeShortlister
* **Method**: GET
* **Auth Required**: Yes (Company)
* **Query Parameters**:
  + threshold: Minimum score for shortlisting (0-1, default: 0.7)

**Success Response:**

{  
 "message": "Candidates ranked successfully",  
 "job": {  
 "job\_id": 1,  
 "company\_name": "Example Corp",  
 "job\_role": "Software Engineer",  
 "job\_type": "Full-time",  
 "location": "New York, NY",  
 "skills\_required": "Python, React, AWS",  
 "education\_qualification": "Bachelor's degree in Computer Science",  
 "description": "We are looking for a software engineer...",  
 "stipend": "$80,000-$100,000"  
 },  
 "candidates": [  
 {  
 "candidate\_id": 1,  
 "fullname": "John Doe",  
 "email": "john@example.com",  
 "phone": "1234567890",  
 "location": "Boston, MA",  
 "years\_experience": 3,  
 "resume\_file\_path": "/Uploads/resumes/1\_20231001120000\_resume.pdf",  
 "status": "pending",  
 "skills": [  
 {  
 "skill\_name": "Python",  
 "category": "technical",  
 "proficiency": "advanced"  
 },  
 {  
 "skill\_name": "React",  
 "category": "technical",  
 "proficiency": "intermediate"  
 }  
 ],  
 "skill\_score": 0.85,  
 "skill\_match\_details": {  
 "matched\_skills": [  
 {  
 "required": "Python",  
 "matched": "Python",  
 "similarity": 1.0,  
 "proficiency": "advanced",  
 "proficiency\_score": 0.75  
 },  
 {  
 "required": "React",  
 "matched": "React",  
 "similarity": 1.0,  
 "proficiency": "intermediate",  
 "proficiency\_score": 0.5  
 }  
 ],  
 "missing\_skills": ["AWS"],  
 "total\_required": 3,  
 "matched\_count": 2  
 },  
 "experience\_score": 0.78,  
 "experience\_match\_details": {  
 "text\_similarity": 0.82,  
 "years\_match": 0.7  
 },  
 "aggregate\_score": 0.82  
 }  
 ],  
 "total\_candidates": 1  
}

### Candidate Endpoints

#### Get Candidate Profile

Retrieve the candidate’s profile.

* **URL**: /candidate/profile
* **Method**: GET
* **Auth Required**: Yes (Candidate)

**Success Response:**

{  
 "id": 1,  
 "email": "candidate@example.com",  
 "fullName": "John Doe",  
 "phone": "1234567890",  
 "location": "Boston, MA",  
 "years\_experience": 3,  
 "resume\_file\_path": "/Uploads/resumes/1\_20231001120000\_resume.pdf",  
 "status": "pending",  
 "created\_at": "2023-10-01T12:00:00",  
 "updated\_at": "2023-10-01T12:00:00",  
 "education": [  
 {  
 "education\_id": 1,  
 "degree": "Bachelor of Science in Computer Science",  
 "institution": "MIT",  
 "graduation\_year": 2020,  
 "gpa": 3.8  
 }  
 ],  
 "skills": [  
 {  
 "skill\_id": 1,  
 "skill\_name": "Python",  
 "skill\_category": "technical",  
 "proficiency\_level": "advanced"  
 },  
 {  
 "skill\_id": 2,  
 "skill\_name": "React",  
 "skill\_category": "technical",  
 "proficiency\_level": "intermediate"  
 }  
 ]  
}

#### Update Candidate Profile

Update basic candidate profile information.

* **URL**: /candidate/profile
* **Method**: PUT
* **Auth Required**: Yes (Candidate)

**Request Body:**

{  
 "fullName": "John Smith",  
 "phone": "9876543210",  
 "location": "New York, NY",  
 "years\_experience": 4  
}

**Success Response:**

{  
 "message": "Profile updated successfully",  
 "candidate": {  
 "id": 1,  
 "email": "candidate@example.com",  
 "fullName": "John Smith",  
 "phone": "9876543210",  
 "location": "New York, NY",  
 "years\_experience": 4,  
 "resume\_file\_path": "/Uploads/resumes/1\_20231001120000\_resume.pdf"  
 }  
}

#### Add Education

Add an education record to candidate profile.

* **URL**: /candidate/education
* **Method**: POST
* **Auth Required**: Yes (Candidate)

**Request Body:**

{  
 "degree": "Master of Science in Data Science",  
 "institution": "Stanford University",  
 "graduation\_year": 2022,  
 "gpa": 3.9  
}

**Success Response:**

{  
 "message": "Education added successfully",  
 "education": {  
 "education\_id": 2,  
 "degree": "Master of Science in Data Science",  
 "institution": "Stanford University",  
 "graduation\_year": 2022,  
 "gpa": 3.9  
 }  
}

#### Update Education

Update an education record.

* **URL**: /candidate/education/{education\_id}
* **Method**: PUT
* **Auth Required**: Yes (Candidate)

**Request Body:**

{  
 "degree": "Master of Science in Data Science",  
 "institution": "Stanford University",  
 "graduation\_year": 2023,  
 "gpa": 4.0  
}

**Success Response:**

{  
 "message": "Education updated successfully"  
}

#### Delete Education

Delete an education record.

* **URL**: /candidate/education/{education\_id}
* **Method**: DELETE
* **Auth Required**: Yes (Candidate)

**Success Response:**

{  
 "message": "Education deleted successfully"  
}

#### Add Skill

Add a skill to candidate profile.

* **URL**: /candidate/skills
* **Method**: POST
* **Auth Required**: Yes (Candidate)

**Request Body:**

{  
 "skill\_name": "TensorFlow",  
 "skill\_category": "technical",  
 "proficiency\_level": "intermediate"  
}

**Success Response:**

{  
 "message": "Skill added successfully",  
 "skill": {  
 "skill\_id": 3,  
 "skill\_name": "TensorFlow",  
 "skill\_category": "technical",  
 "proficiency\_level": "intermediate"  
 }  
}

#### Update Skill

Update a skill record.

* **URL**: /candidate/skills/{skill\_id}
* **Method**: PUT
* **Auth Required**: Yes (Candidate)

**Request Body:**

{  
 "skill\_name": "TensorFlow",  
 "skill\_category": "technical",  
 "proficiency\_level": "advanced"  
}

**Success Response:**

{  
 "message": "Skill updated successfully"  
}

#### Delete Skill

Delete a skill record.

* **URL**: /candidate/skills/{skill\_id}
* **Method**: DELETE
* **Auth Required**: Yes (Candidate)

**Success Response:**

{  
 "message": "Skill deleted successfully"  
}

#### Upload Resume

Upload a resume file.

* **URL**: /candidate/resume
* **Method**: POST
* **Auth Required**: Yes (Candidate)
* **Content-Type**: multipart/form-data

**Form Data:** - resume: Resume file (PDF, DOC, DOCX, TXT)

**Success Response:**

{  
 "message": "Resume uploaded successfully",  
 "file\_path": "/Uploads/resumes/1\_20231001120000\_resume.pdf",  
 "filename": "1\_20231001120000\_resume.pdf",  
 "parsed\_data": {  
 "candidate": {  
 "fullname": "John Doe",  
 "email": "john@example.com",  
 "phone": "1234567890",  
 "location": "Boston, MA",  
 "years\_experience": 3,  
 "experience": "3 years of experience in full-stack development..."  
 },  
 "education": [  
 {  
 "degree": "Bachelor of Science in Computer Science",  
 "institution": "MIT",  
 "graduation\_year": 2020,  
 "gpa": 3.8  
 }  
 ],  
 "skills": [  
 {  
 "skill\_name": "Python",  
 "skill\_category": "technical",  
 "proficiency\_level": "advanced"  
 },  
 {  
 "skill\_name": "React",  
 "skill\_category": "technical",  
 "proficiency\_level": "intermediate"  
 }  
 ]  
 },  
 "database\_update": "success",  
 "update\_message": "Candidate data updated successfully"  
}

## Error Handling

All endpoints return appropriate HTTP status codes:

* 200 OK: Request succeeded
* 201 Created: Resource created successfully
* 400 Bad Request: Invalid request parameters
* 401 Unauthorized: Authentication required or failed
* 403 Forbidden: Permission denied
* 404 Not Found: Resource not found
* 500 Internal Server Error: Server-side error

Error responses include a message field explaining the error:

{  
 "message": "Error message description"  
}

## AI Technologies Used

### Resume Parsing

* **Technology**: Google Gemini 2.0 Flash
* **Features**:
  + Extracts structured data from unstructured resume text
  + Identifies candidate details, education, skills, and experience
  + Assigns skill categories and proficiency levels

### Candidate Shortlisting

* **Technologies**: SentenceTransformers, Natural Language Processing
* **Features**:
  + Skills matching with similarity scoring (85% weight)
  + Experience evaluation using semantic text similarity (70% weight)
  + Experience years matching against job requirements (30% weight)
  + Education qualification assessment
  + Aggregate scoring with configurable thresholds